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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,309	04/14/2004	Christopher C. Capelli	BITI-08569	5983

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EXAMINER

PAK, JOHN D

ART UNIT	PAPER NUMBER
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1616

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/824,309	Applicant(s) CAPELLI, CHRISTOPHER C.	
	Examiner JOHN PAK	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-18 is/are allowed.
- 6) ☒ Claim(s) 1-4 and 19-25 is/are rejected.
- 7) ☒ Claim(s) 5-7 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

This Office action is in response to applicant's amendments and remarks of 11/25/2005. Claims 1-25 are pending in this application and they will presently be examined.

Claims 6 and 24 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 6 and 24 read on a quaternary amine attached to a polymer, wherein the quaternary amine is triethylamine. Triethylamine is not a quaternary amine, so claims 6 and 24 are improperly dependent on claims that require a quaternary amine.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 19-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 19 recites two different silver thiosulfate complexes. The first one is already bound to the anion exchange resin and the second one is in aqueous solution. However, at line 7, claim 19 recites "said complex" without making clear which complex is being referenced. When there are two different types of the same complex,

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“said” must be used with more precision. Dependent claims are included here because they do not cure the deficiency of the independent claims.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Jansen et al. (US 5,605,632).

Jansen et al. explicitly disclose silver in the ionized form of  $[\text{Ag}(\text{S}_2\text{O}_3)_2]^{-3}$  in water, which is ion-exchanged with an ion-exchange resin. The exemplified resin is an anion exchange resin since chloride is the mobile ion and it exchanges with the silver thiosulfate to release a chloride ion while capturing the silver complex. See column 1, lines 19-31.

The thiosulfate ion to silver molar ratio in Jansen’s complex is 2:1, which meets applicant’s “less than 3:1” ratio. Applicant’s step (a)(i) in claim 19 requires an already loaded anion exchange resin to be further introduced to an aqueous solution of silver thiosulfate with the claim-required ratio. Jansen’s steps are continuous in that the ion-exchange resin continues to capture the silver thiosulfate complex. This meets applicant’s claim features. The claims are thereby anticipated.

Claims 1-2 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Lasko et al.

Lasko et al. explicitly disclose silver in the ionized form of  $[\text{Ag}(\text{S}_2\text{O}_3)_2]^{-3}$  in water, which is ion-exchanged with an anion-exchange resin having a quaternary ammonium functional group, Amberlite IRA-458 (see page 3623, left column, "Experimental Section," lines 11-12; page 3624, Tables 1 and 2).

The thiosulfate ion to silver molar ratio in Lasko's complex is 2:1, which meets applicant's "less than 3:1" ratio. Applicant's step (a)(i) in claim 19 requires an already loaded anion exchange resin to be further introduced to an aqueous solution of silver thiosulfate with the claim-required ratio. Lasko's steps are continuous in that the resin continues to bind the silver thiosulfate complex. This meets applicant's claim features. The claims are thereby anticipated.

Claims 1-3 and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Chemical Abstracts 52:11517g (1958).

Chemical Abstracts 52:11517g explicitly discloses a distribution of  $\text{Ag}^+$  between sodium thiosulfate solution and Dowex-1 resin. Resin species of  $\text{RAgS}_2\text{O}_3$  (R is the resin) is expressly disclosed.

The thiosulfate ion to silver molar ratio in resin species is 1:1, which meets applicant's "1:1" ratio. Applicant's step (a)(i) in claim 19 requires an already loaded

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anion exchange resin to be further introduced to an aqueous solution of silver thiosulfate with the claim-required ratio. The cited reference's steps are continuous in that the resin continues to bind the silver and thiosulfate. This meets applicant's claim features. U.S. Patent No. 4,111,856 is cited to merely establish that Dowex-1 was publicly known in the year 1954 as a quaternary ammonium polystyrene-divinyl benzene copolymer (column 1, lines 33-38). Therefore, the Dowex-1 disclosed in the cited reference inherently meets applicant's claim features. The claims are thereby anticipated.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chemical Abstracts 52:11517g in view of WO 99/13116.

Chemical Abstracts 52:11517g explicitly discloses a distribution of  $\text{Ag}^+$  between sodium thiosulfate solution and Dowex-1 resin. Resin species of  $\text{RAgS}_2\text{O}_3$  (R is the resin) is expressly disclosed.

Chemical Abstracts 52:11517g does not explicitly disclose that the Dowex-1 resin is in the form of beads and sized less than approximately 0.8 mm in average diameter. However, ion resins such as Dowex-1 come in small bead forms and sizes and the instant features would have been obvious to the ordinary skilled artisan. WO 99/13116 discloses ion exchange resins in the form of beads and broad particle sizes (page 8, lines 26-27; page 10, lines 13-14; paragraph bridging pages 10-11; page 14, lines 1-2). The ion exchange beads in WO 99/13116 are used to bind silver thiosulfate (page 7, lines 21-31).

Thus, one having ordinary skill in the art would have been motivated to utilize the Dowex-1 resin as taught by Chemical Abstracts 52:11517g, which is by its very nature a polystyrene type polymer, in the form of beads because of convenience of distribution, dispersion and coverage. Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the teachings of the cited references.

Claims 8-18 are allowed.

Claims 5 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is **(571)272-0620**.

The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Gary Kunz, can be reached on **(571)272-0887**.

The fax phone number for the organization where this application or proceeding is assigned is **(571)273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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